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Case No.: 49286US003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: JOHNSON, MICHAEL A.

Application No.: 08/421055 Confirmation No.: 5806

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Title: MELT-FLOWABLE MATERIALS AND METHOD OF SEALING SURFACES

REPLY BRIEF

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<i>February 12, 2008</i> <i>Carrie Price</i>	

Dear Sir:

This paper is in reply to the Examiner's Answer, mailed on December 12, 2007, to the Substitute, filed September 11, 2007, in light of the Final Office Action mailed November 16, 2006, finally rejecting claims 6-13, 16-24, 26-29 and 31-37.

Appellants request the opportunity for a personal appearance before the Board of Appeals to argue the issues of this appeal. The fee for the personal appearance will be timely paid upon receipt of the Examiner's Answer.Fees

- Please charge any additional fees associated with the prosecution of this application to Deposit Account No. 13-3723. This authorization includes the fee for any necessary extension of time under 37 CFR § 1.136(a). To the extent any such extension should become necessary, it is hereby requested.
- Please credit any overpayment to the same deposit account.

**REMARKS****General Arguments**

The primary reference used in rejecting the appealed claims 6-13, 16-24, 26-29 and 31-37 is Japanese Patent Application 3-273975 (hereinafter, "JP'975"). It is respectfully submitted that, in supporting the rejection of the present claims, the Examiner has significantly mischaracterized the JP'975 disclosure.

JP'975 teaches a tape (4) comprising a layer 4a and a layer 4b. The tape 4 is used to seal and rust proof the seam of a joint formed between adjacent welded metal plates 1 and 2. The steel plates 1 and 2 are coated with a primer coating 3, before the tape 4 is applied, and then painted after the tape 4 is applied. JP'975 teaches to use an adhesive layer 4b to adhere the tape 4 to a desired surface, until a sealing layer 4a can be heated so as to seal the seam of the primer coated steel plate weld joint.

As indicated on page 6, lines 12-22 of the English translation of JP'975, layer 4b is an uncured thermosetting adhesive that has "good adhesiveness between base material 4a and ED coating film 3...". It is believed that the adhesive of layer 4b is a pressure sensitive adhesive (PSA). For example, see page 8, lines 13-17, where it is stated that the tape 4 can be adhered "in a perpendicular condition" before the tape 4 is subjected to the baking process. Layer 4a is expressly disclosed as comprising a material that has "good follow-up properties to the unevenness and the curved surface of ED coating film 3 of the coating surface, and it has good adhesiveness of coating." JP'975 expressly teaches using "a hot-melt film" for layer 4a. Layer 4a is referred to as a "base material" because, in making tape 4, the layer 4b is coated onto layer 4a (see page 6, lines 9-10). In application, however, the layer 4b is on the bottom and layer 4a is on top.

In applying the tape 4, JP'975 teaches to first adhere the tape 4 to the location of the seam to be sealed (see page 7, lines 19-20), using adhesive layer 4b, and then the adhered tape 4 is baked so that the entire tape 4 is softened and the seam sealed (see page 8, lines 5-8).

In contrast, the invention recited in the present appealed claims is directed to a method comprising heating a specific multi-layered sheet material that includes a dimensionally stable film on top of a melt-flowable composition. The recited sheet material is heated to a melt sealing temperature sufficient to cause the melt-flowable composition to (1) melt, flow and level out over surface imperfections or fill gaps in a step joint, as well as (2) adhere and form a bond to the

step joint. The sheet material and the step joint are allowed to cool while substantially retaining the surface topography of the dimensionally stable film. The dimensionally stable film is sufficiently dimensionally stable so as not to melt and flow or exhibit wrinkling when heated to the melt sealing temperature and subsequently cooled. One example of such a dimensionally stable film, expressly disclosed in the present application and recited in claim 13, includes an oriented polyethylene terephthalate film (e.g., a MYLAR film).

JP'975 does not disclose, teach or suggest such a method. For example, JP'975 never teaches that it wants its top layer 4a to remain dimensionally stable, when the tape 4 is baked. On the contrary, JP'975 expressly teaches the opposite when it states: "The tape 4 was once softened at the time of the baking process, but it was hardened when it becomes ordinary temperature." See, page 8, lines 7-8. In addition, JP'975 expressly teaches to use a "hot-melt film" for its top layer 4a. This is hardly the type of material to use, if one is concerned about maintaining the dimensional stability of the layer 4a during a baking process. Furthermore, JP'975 does not teach baking its tape 4 so that its lower layer 4b melts, flows and levels out over surface imperfections or fill gaps in a step joint. In fact, JP'975 only teaches using an uncured thermosetting adhesive for its bottom layer 4b, not a melt-flowable composition as recited in the present claims.

It is requested that the above points be considered, when evaluating the applicability of JP'975 in rejecting the present appealed claims.

The following are remarks relative to the specific grounds for rejection raised in the Examiner's Answer.

#### First Ground of Rejection:

Claims 6, 8, 16, 17, 19-24 and 34 stand rejected under 35 USC § 102(b) as being anticipated by Japanese Patent Application 3-273975 (hereinafter, "JP'975"). The Examiner's Answer includes the following statement:

Appellants argue that because the entire tape of the reference does not melt it does not meet the claim limitation added to claim 6, but this is not the case: claim 6 requires only that the *meltflowable composition* melt. Further, the disclosed flow of the adhesive implies melting of the adhesive and therefore provides sufficient basis for the examiner to infer that the adhesive in the above process also melts; burden is therefore shifted to appellants to show lack of inherency (see for example the case law cited in MPEP 21 12-21 12.02). (Emphasis Added)

It is believed that the Examiner intended to state: --the entire tape of the reference does melt--. Otherwise, this statement would not make sense and Appellants never made such an argument. Even with this correction, it is submitted that the Examiner has not cited where JP'975 teaches to bake the tape 4 so as to causes its adhesive layer 4b to "(1) melt, flow and level out over surface imperfections or fill gaps in a step joint, as well as (2) adhere and form a bond to the step joint", as recited in the present method claims. Therefore, the Examiner has not met his burden of proving a *prima facie* case of anticipation.

Relative to this first ground for rejection, the Examiner's Answer also includes the following statement:

Appellants also argue that the reference base film is not dimensionally stable, but this is not the case: the reference clearly discloses preventing unevenness and avoiding any seal finishing process which would be required to remove excess adhesive while assuring rust-proofing of the step joint (filling the gap of the step joint)(translation p. 4) and providing that the tape is thin enough to conform to the step joint without showing through the coatings 5 and 6 (translation p. 7), therefore during the baking step the base film cannot melt (otherwise some adhesive would flow outside the step joint, thereby failing to assure rust-proofing of the step joint and requiring the undesired seal finishing step to remove the excess adhesive) and cannot substantially shank or wrinkle (otherwise there would be undesired unevenness showing through the film coatings 5 and 6) therefore providing sufficient basis for the examiner to infer that the base film in the above process is also dimensionally stable; burden is therefore shifted to appellants to show lack of inherency (see for example the case law cited in MPEP 21.12-21.12.02).

It is submitted that, even if the JP'975 tape 4 was the same as the present claimed "sheet material" (which is denied), the Examiner has misstated the elements recited in the present method claims. In particular, for example, JP'975 does not disclose heating its tape 4 to a melt sealing temperature sufficient to cause the bottom adhesive layer 4b to (1) melt, flow and level out over surface imperfections or fill gaps in a step joint, as well as (2) adhere and form a bond to the step joint. In addition, JP'975 does not teach that its top hot-melt film layer 4a is sufficiently dimensionally stable so as not to melt and flow or exhibit wrinkling when the tape 4 is baked and subsequently cooled. Nor does JP'975 teach that when the tape 4 and the steel plates 1 and 2 are allowed to cool, the surface topography of the top hot-melt film layer 4a is substantially retained (i.e., as compared to its original surface topography).

**Second Ground of Rejection**

Claims 6, 8, 12, 13, 16, 17, 19-24, and 34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application 3-273975 A. The Examiner's Answer includes the following statement:

Appellants' "obvious-to-try" argument is not persuasive in view of the motivation set forth above and the recent Supreme Court decision in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Finally, appellants' additional arguments are based on the argument that the reference base film is not dimensionally stable, which is not persuasive for the reasons noted above.

This rejection is based on the position taken by the Examiner that it is accurate to describe the upper layer 4a as a dimensionally stable film, as that term is used in the present application and claims. It is submitted that the person of ordinary skill in the art would not be motivated, based on the teachings of JP'975, to use an "oriented polyethylene terephthalate film such as MYLAR" (see paragraph b on page 5 in the Examiner's Answer) for the upper layer 4a, when JP'975 expressly teaches to use a hot-melt film for layer 4a. Especially when, as the Examiner points out, MYLAR film is notoriously well known for its dimensional stability.

**Third Ground of Rejection**

Claims 7, 9, and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application 3-273975 A as applied to claims 6, 8, 12, 13, 16, 17, 19-24, and 34 above, and further in view of Schappert et al. (4,822,683) and Manser et al. (4,920,182). The Examiner's Answer includes the following statement:

It is well known to blend such thermosetting epoxy resin adhesive with thermoplastic polyester resin (which is highly crystalline, making the blend semi-crystalline) in order to maintain good adhesive properties while minimize shrinkage of the adhesive upon curing and improving flexibility, as evidenced by Schappert et al. (col. 1 lines 10-55 and col. 6 lines 20-41) and Manser et al. (col. 1 lines 6-55 and col. 8 line 62 - col. 9 line 8) for example; it would therefore have been obvious to one of ordinary skill in the art to use such a well known blend as the adhesive in the above method in order to maintain good adhesive properties while minimize shrinkage of the adhesive upon curing and improving flexibility. ... In this case, the motivation to combine the references (to maintain good adhesive properties while minimize shrinkage of the adhesive upon curing and improving flexibility) is clearly set forth in the rejection.

Each of claims 7, 9 and 28 recites a specific composition for the claimed "melt-flowable composition". These claims are not reciting adhesive compositions. The Examiner has failed to

provide any motivation for combining these references to produce a melt-flowable composition that can be heated to (1) melt, flow and level out over surface imperfections or fill gaps in a step joint, as well as (2) adhere and form a bond to the step joint.

Relative to this third ground for rejection, the Examiner's Answer also includes the following statement:

In response to appellants' argument that the secondary references are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443'24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the references and the claimed invention all pertain to the adhesive/coating/laminating arts.

It is submitted that the Examiner has mischaracterized the relevant art pertinent to the present invention. The present invention relates to the sealant art, not the adhesive art. The JP'975 tape 4 is not being used to adhere the two steel plates 1 and 2 together.

#### **Fourth Ground of Rejection**

Claims 10 and 11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application 3-273975 A as applied to claims 6, 8, 12, 13, 16, 17, 19-24 and 34 above, and further in view of Leatherman et al. (4,877,679) and Leatherman et al. (4,892,779). The Examiner's Answer includes the following statement:

It would have been obvious to one of the ordinary skill in the art to make the hot-melt base film from ultra high molecular weight microporous polyolefin because such film has the required dimensional stability (does not melt and flow) and is well suited to accept coatings such as printing.

It is submitted that the person of ordinary skill in the art would not replace a hot-melt film (i.e., the JP'975 layer 4a) with a material that, as the Examiner admits, does not melt and flow.

#### **Fifth Ground of Rejection**

Claims 18, 29, 31, 36, and 37 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application 3-273975 A as applied to claims 6, 8, 12, 13, 16, 17, 19-24, and 34 above, and further in view of Manser et al. (4,920,182) and Japanese Patent Application 58-217516 A. The Examiner's Answer includes the following statement:

The only difference between the above method and the claimed method is the substantially smooth, paint-receptive film surface comprising a thermosetting epoxy-

polyester blend, however the claimed thermosetting epoxy-polyester blend is well known as a paint or ink (pigmented) composition having good adhesion and flexibility, as evidenced by Manser et al. (col. 1 lines 6-55, col. 7 lines 31-39, and col. 8 lines 62 - col. 9 line 8) and JP '516 (abstract) for example; it would therefore have been obvious to one of ordinary skill in the art to use such well known paint or ink composition as the paint layer on the base film in the above method.

It is respectfully submitted that the Examiner has misinterpreted these rejected claims. These claims relate to an aspect of the dimensionally stable film (i.e., a paint receptive surface of the dimensionally stable film), not a paint layer to be applied to the dimensionally stable film. It is submitted that the person of ordinary skill in the art would not have been motivated to use a liquid paint or ink composition as the composition for the dimensionally stable film recited in the claims.

#### **Sixth Ground of Rejection**

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application 3-273975 A as applied to claims 6, 8, 12, 13, 16, 17, 19-24, and 34 above, and further in view of European Patent Application 0 384 598 A1. The Examiner's Answer includes the following statement:

It is well known in such sealing tapes to provide the melt-flowable adhesive layer with an outer layer of pressure-sensitive adhesive in order to precisely position the tape and maintain the position during melt-flowing of the melt-flowable adhesive layer, as evidenced by EP'598 (p.1 line 4 – p. 2 line 3) for example; it would therefore have been obvious to one of ordinary skill in the art to provide the melt-flowable adhesive layer in the above method with such a well-known outer pressure-sensitive adhesive layer in order to precisely position the tape and maintain the position during melt-flowing of the melt-flowable adhesive layer.

Claim 32 recites:

A method according to claim 6 wherein said melt-flowable composition comprises a plurality of melt-flowable layers in which the melt-flow properties of the individual layers are tailored such that said layers cooperate with each other to seal said step joint. (Emphasis Added)

Claim 32 does not recite a plurality of pressure-sensitive adhesive layers, as asserted in the Examiner's Answer.

**Seventh and Eighth Grounds of Rejection**

Claims 26, 27, and 33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application 3-273975 A as applied to claims 6, 8, 12, 13, 16, 17, 19-24, and 34 above, and further in view of Japanese Patent Application 1-1 52049 A. In addition, claim 35 also stands rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application 3-273975 A in view of Schappert et al. (4,822,683) and Manser et al. (4,920,182) as applied to claims 7, 9, and 28 above, and further in view of Japanese Patent Application 1-1 52049 A. The Examiner's Answer includes the following statement for both of these grounds:

A roof ditch is a notoriously well known vehicle step joint, as evidenced by JP '049

JP'975 discloses a tape 4 for sealing a joint formed by two flat overlapping steel plates. There is no disclosure, teaching or suggestion that tape 4, as disclosed in JP'975, would be suitable for sealing a roof ditch. In fact, JP'975 teaches to use an "extremely thin" tape 4 (see, page 7, line 6). The fact that roof ditches are notoriously well known does not cure this weakness in the Examiner's argument.

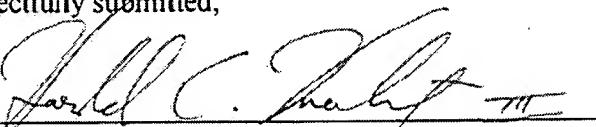
**CONCLUSION**

For the foregoing reasons, appellants respectfully submit that the Examiner has erred in rejecting this application. Please reverse the Examiner on all counts.

Respectfully submitted,

Date

2/12/08

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